WHAT IS CLAIMED IS:

1. A solid-state image pickup device comprising a plurality of light receiving sections formed on a semiconductor substrate, vertical transfer sections for transferring charges read from the light receiving sections in a vertical direction and a horizontal transfer section for transferring charges transferred by the vertical transfer sections in a horizontal direction, wherein

said solid-state image pickup device is provided with a charge discharge gate which is formed adjacent to a connection of the vertical transfer section and the horizontal transfer section and depletes charges in the vertical transfer section and a charge discharge drain formed adjacent to the charge discharge gate, and

signal charges in an arbitrary vertical transfer section are discharged from the charge discharge gate to the charge discharge drain by applying a voltage to the charge discharge gate in an arbitrary timing.

2. The solid-state image pickup device according to Claim 1, wherein

a layer directly under the gate having the same conductive type as that of the vertical transfer section is formed under the discharge gate positioned between the vertical transfer section and the discharge drain.

3. The solid-state image pickup device according to Claim 1, wherein

a layer directly under the gate having the same conductive type as that of the vertical transfer section is formed under the discharge gate positioned between the vertical transfer section and the discharge drain in the same process of forming the vertical transfer section.

4. The solid-state image pickup device according to Claim 1, wherein

the discharge gate covers at least part of the vertical transfer section.

5. The solid-state image pickup device according to Claim 1, wherein

a voltage applied to the discharge drain is made variable and a drive timing of a voltage applied to the discharge drain is synchronized with a drive timing of a voltage applied to the discharge gate.

6. The solid-state image pickup device according to Claim 5, wherein

a pulse width applied to the discharge drain covers at least a pulse applied to the discharge gate in a discharge operation mode where the discharge drain is driven while synchronized with driving of the discharge gate.

7. The solid-state image pickup device according to Claim 1, wherein

one discharge drain is provided between the neighboring vertical transfer sections and signal charges in the two vertical transfer sections positioned on both sides of the discharge drain are discharged to this one discharge drain via the discharge gate provided adjacent to the vertical transfer sections.

8. The solid-state image pickup device according to Claim 1, wherein

the vertical transfer section provided with the discharge drain and the vertical transfer section not provided with the discharge drain are arbitrarily set and the combinations of the set discharge drains are arranged on a plurality of stages in the vertical direction.